

## Hansen, Janette

---

**From:** Hansen, Janette  
**Sent:** Thursday, October 22, 2015 8:53 AM  
**To:** Roy, Stephen  
**Subject:** RE: Question for You

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

I'm looking at the MI Potash application. They want to dissolve the Evaporite right up to the A-1 Carbonate. The A-1 is fairly thin here, so I am concerned about roof strength. The A-2 Carb is much thicker, and would not be in "danger" if the solution mining goes into the A-1 Carb, or even into the A-2 Evaporite. I know that the USDW would be protected in either case, but I want to make sure that the confining zone named in our Statement of Basis is protected.

---

**From:** Roy, Stephen  
**Sent:** Thursday, October 22, 2015 8:47 AM  
**To:** Hansen, Janette <[hansen.janette@epa.gov](mailto:hansen.janette@epa.gov)>  
**Subject:** RE: Question for You

Well, I'm not aware of any instance in which we have done that (allowed some sort of limbo between the IZ and the CZ), which doesn't mean we haven't done it. The CZ wasn't even identified in the statement of basis until recently (didn't we change our boilerplate to do this?) Typically I think we've picked the top of the IZ and then said the strata above it constitute the confining zone. We have typically assumed that stratigraphic boundaries are hydrologic boundaries, knowing that this may or may not be accurate in specific cases. I see the potential lithologic difficulty: if the strata immediately above the IZ aren't at least aquitards and preferably aquicludes, what's to prevent injectate from moving upward within the rock? For class I haz waste injection wells, the arrestment interval is defined for this purpose, but not for other classes of wells.

I think if we look at the definitions of these zones in the regs, there is no actual requirement that they be adjacent. In the past, when we detected the presence of injectate above the top of the permitted IZ in class I non-haz waste injection wells, we required the permittee to justify the top of the IZ when the permits were due for renewal. If appears that the regs don't actually prohibit this movement, somehow. I don't remember the details. We can discuss further if you'd like.

Steve

---

**From:** Hansen, Janette  
**Sent:** Thursday, October 22, 2015 8:23 AM  
**To:** Roy, Stephen <[roy.stephen@epa.gov](mailto:roy.stephen@epa.gov)>  
**Subject:** Question for You

Am I correct in saying that we haven't required the confining unit to be immediately above the injection zone, as long as the USDW is protected? (In this case, about a vertical mile between the confining formation and the USDW.)

*Janette*